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ABSTRACT

The differences in the person-environment fit and levels of anxiety of older adults in professional schools versus older students in liberal arts schools were studied to determine if the states of ego development of older adults (35 years of age or older) were related to the degree of academic and environmental restrictiveness in professional and liberal arts schools, and to determine if there was an interaction between this person-environment fit and satisfaction and anxiety. A random sample of 279 students from 3 professional and 2 liberal arts schools in the New York City metropolitan area responded to selected questions from the following questionnaires: The Washington University Sentence Completion Test, which measures ego development; the Student Reactions to College Questionnaire, and the State-Trait Anxiety Index. No significant difference was found in the levels of ego development of older students in professional schools versus those in liberal arts schools, nor was any significant difference noted between professional and liberal arts students in their perceptions of the overall openness or restrictiveness of the environment. However, some factor-specific effects on anxiety and on satisfaction were noted. Appendices include factor tables, definitions of openesss-restrictiveness dimensions, and an addendum of tables and data testing several alternative hypotheses. (Contains 107 references.) (CH)

Stress and Anxiety in Adult Learners in Professional and Liberal Arts Schools: An Exploration of Person-Environment Fit Theory

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Stress and Anxiety in Adult Learners in Professional and Liberal Arts Schools: An Exploration of Person-Environment Fit Theory

Introduction

Older students returning to college, adult education programs, and graduate schools, may have learning styles and teaching preferences that are different from those of more traditionally aged students, but little research has been focused on them. Moreover, the crest of the so-called "baby boom" cohort in America--those who are now over the age of 40--will continue to have a profound effect on post-secondary education well into the millennium. A report issued by The Education Resources Institute (1996) indicates that between 1970 and 1993, a 235% rise in the enrollment of students over the age of 40 occurred (pp. 14-15). Many institutions of higher education have recognized the importance of this phenomenon, and have made policy decisions to accommodate the special needs of the older student with respect to admissions, financial aid, and other student services. In the main, however, the dearth of research about the educational needs of this particular cohort provides a fertile field for research.

It is suggested that older students returning to college, graduate schools, and adult education programs, may have learning styles and teaching preferences that are different from those of more traditionally aged students, but little research has been specifically designed to explore these differences. Narrowing the focus to older graduate students enrolled in professional and liberal arts schools, we do not know, for example: 1) what psychological predispositions for learning differ among older students entering professional versus liberal arts schools, 2) whether the curricula in each of these types

of schools "fit" the learning predisposition, and 3) what the effects are of a fit or misfit of the first two on students' reports of satisfaction and levels of anxiety. Research on these questions of adult liberal and professional education will reveal if and how such a fit may be conducive to the further education of the student, leading in turn lead to a review and reconceptualization of the central questions of the design of educational environments that properly and efficiently address student needs.

In sum, the educational question asked in this paper centers on whether there are differences in the person-environment fit and levels of anxiety of older students in professional schools versus older students in liberal arts schools, and on what implications these differences or lack of differences might have on current educational policies and practices

Background

For a number of years, institutions of higher education have witnessed the entrance of an increasingly larger number of older adults into undergraduate degree programs, continuing education courses, and graduate and professional schools. Cross (1981), was among the first to alert higher education professionals to what was then a relatively new phenomenon. She pointed to a number of reasons for this trend, not the least of which were the demographic changes that had taken place then and are continuing to occur in the United States. For example, because a better standards of living, better sanitary conditions, health care and nutrition, people are living longer and remaining active longer in their careers. In addition, the demands of new

technologies, the uncertainties of a dynamic economy, and the opportunities open to women and minorities add further incentives for older adults to seek additional education. Many enter programs to learn how to use computers, word processors and other tools of the communications era, to work for a first degree, or to study for the advanced degrees that would help them to enter a new profession or occupation. Some do not wish to obtain degrees but elect to study for other reasons, such as personal growth and satisfaction (The Education Resources Institute, 1996). In addition to the reasons stated above, Boyatzis, et al. (1995), point to diminishing number of managerial positions, lay-offs, cutbacks, and a demand for even newer technology skills as forces that are contributing to workers need to retrain or obtain credentials to begin a new career, thus increasing older adults' utilization of higher education.

In a discussion of these older students, earlier researchers reasoned that mature students were different from younger adult students and that they should therefore have special services geared to their characteristics (Blocher and Raposa, 1981). Some adult developmental theorists also suggest that older students have learning styles and teaching preferences that are different from those of more traditionally aged students (Merriam & Brockett, 1997; Merriam & Cafarella, 1991; Cross, 1981, 1978, 1977, 1976; Tough, 1979, 1978; Knowles, 1980, 1978; Kolb, 1995, 1981, 1984; Weathersby, 1981.) Additional contributions to the understanding of the older adult have been made by Loevinger and Wessler (1970); Loevinger, Wessler, and Redmore (1970) Loevinger, (1987, 1979, 1976); and Loevinger, Cohn,

Redmore, Bonneville, Streich, and Sargent, (1985), who focused on the ego development of the person and the various life-cycle phases through which individuals pass. Their findings support the view that individual behavior may be affected by the various stages of the developmental cycle itself. There is also evidence reported that colleges and universities have not adequately responded to the different curricular and pedagogic needs of older adults returning to school. For example, other researchers have revealed that a significant number of older students feel more anxiety in open classroom environments in liberal arts colleges (in which students cooperated with the instructor in setting goals and class assignments), than they do in more traditionally structured environments in which the teacher plays the principal role in determining how the instruction should proceed (Conti, 1985; Check, 1985). Interestingly, there seems to be no documented evidence that similar problems with curricula are encountered by older adults returning to <u>professional</u> schools, even though Boyatzis, et al. (1995) confirm that business education remains entrenched in traditional teaching methods. In the absence of appropriate evidence, it might be concluded that, for these latter students, the curricula and pedagogies apparently do fit their learning needs, as they evidently do for the younger students who are their classmates.

How can we explain the apparent fit for older students returning to professional schools, and the misfit for returning liberal arts students. First, for the returning professional school students, the divergence between younger and older students suggested by adult

development literature might be explained through prior or anticipatory socialization, or by the stage of development of the individual. For instance, on the one hand, it is possible that adults returning to graduate and professional schools are likely to have histories of work experience which are qualitatively similar to the somewhat more "restrictive" educational environments they encounter. That is, it may be that returning adults are exposed to the same kinds of authority relationships and similar kinds of learning situations in their work settings that are found in their classrooms. They are therefore more comfortable with the vocational and didactic nature of the curricula and pedagogies, or more easily adapt to them, and manifest less anxiety. On the other hand, for liberal arts students who return to school for graduate education, the range of their work and other experiences may also be suitably matched to the less restrictive educational environments they encounter in their schools, thus accounting for their relative lack of anxiety as well.

In addition to prior work experience, it is likely that vocations draw individuals whose psychological dispositions match the work (Holland, 1966). Thus, the personalities, traits, and attitudes of adults who enter professional schools are probably different from some older adults who return for liberal arts degrees. Both factors can explain the fit between person and environment for these returning students. In short, a good person-environment fit occurs when those elements which make up the person, such as abilities, physical and psychological characteristics, coping skills, etc., are a match for the demands of the environment in which the person functions.

A good fit produces satisfaction, whereas a poor fit produces strain (Edwards, 1996; Harrison, 1985, 1978, 1976; French, Caplan and Harrison, 1982). Other investigators suggest that the stress and anxiety experienced by some students might come from the individual as well as from the environment. Spielberger (1984, 1972), and Sarason (1980), for example, note that although the situation in which the individual operates is an important function in producing anxiety, the individual's predisposition to anxiety is equally so. Moreover, stress and anxiety are complex phenomena that can have both positive and negative results.

Observance of these phenomena raises the question of whether different degrees of development among older students might have a relationship to the apparent fit or mis-fit between the person and the environment, and the level of anxiety manifested. To recapitulate, the objective of this research was to determine the fit (among older adult learners in liberal arts and professional schools) between their stages of personal development, the academic and administrative environments in which they study, and the corresponding levels of anxiety and satisfaction resulting from the degree of fit experienced.

Discussion of Theoretical Concepts

The conceptual rationale for this study is drawn from the research of Loevinger and Wessler (1970) on ego development; the work on person-environment fit theory, explored by Harrison (1978) and French, et al. (1974), among others; the concept of stress in educational environments (Whitman, 1984); and the theory of State-Trait Anxiety, discussed by Spielberger (1975, 1972). A model linking these variables appears in

Figure 1 (p. 8). It illustrates the notion that person-environment fit is a function of the interaction of the demands of the environment with individual ego development. The model suggests several hypotheses: where there is good person-environment fit among students in professional and liberal arts schools, less anxiety and greater satisfaction is experienced; where there is a poor P-E fit, greater levels of anxiety and less satisfaction will be found. A good P-E fit, for this research, is conceptualized as a match for professional school students with low levels of ego development in a more restrictive environment, and for liberal arts students with higher levels of ego development in a less restrictive school environment. These are designated as "M" in Figure 1. Another match, less likely to be found in professional school students, is high ego development in an unrestrictive professional school environment, and low ego development in a more restrictive liberal arts school environment. These are illustrated in Figure 1 as M1. In the next sections, we discuss each of these variables in some detail.

Ego Development Theory

Ego development, in the Loevinger, Wessler, and Redmore (1970) analysis, is not the classical Freudian view of the struggle between Ego, Superego, and Id, but it is a holistic view, drawn from ego theorists such as Adler, Sullivan, Freud, Piaget and Kohlberg (Williams & Vincent, 1985), which encompasses such concepts as the development of the self-system, interpersonal integration, interpersonal relatability, character development, and moralization of judgment, all of which " . . . project an abstract continuum that is both a normal developmental

Figure 1.
Conceptual Framework for Study

Environmental Restrictiveness	Professional School Students		Liberal Arts School Students	
	Ego Development		Ego Development	
	Low	High	Low	High
Restrictive	Levels of Anxiety and Satisfaction M		Levels of Anxiety and Satisfaction M1	
Unrestrictive	Levels of Anxiety and Satisfaction	M1	Levels of Anxiety and Satisfaction	M

sequence and a dimension of individual differences in any given age cohort" (1970, p. 3). It also closely parallels research by Perry (1970) whose findings support the theory that people progress cognitively and ethically from dualistic thinking (phenomena are good or bad, right or wrong), through various transitions to relativistic thinking in which one recognizes and accepts diversity of opinion, values, and judgments, some of which may later be found valueless. Reasonable people are expected to disagree, and knowledge is qualitative, depending on contexts.

Loevinger and Wessler (1970) observed that the first stage of ego development begins with the infant, who sees the world through objects, of which it is also one. They further subdivide this stage into a presocial or autistic phase and a symbiotic one. The second stage is called impulsive because the child is ruled by his or her own impulses.

The next stage is called self-protective, for the child understands the concept of blame, but he or she tends to see other people or circumstances as being at fault and avoids personal responsibility. People in this stage understand that there are rules, but they try to break them without getting caught. They are frequently manipulative of others to get their own way, and they are greatly concerned with " . . . controlling and being controlled, with snaring, with domination, and with competition. Life is a zero-sum game. What you win, I lose" (Loevinger and Wessler, 1970, p. 4). During the school years, most children progress to the stage of conformity, and they identify with authority figures, such as parents and teachers. They tend to think of right and wrong, fair and unfair, as the same for

everyone in all circumstances. What is socially approved is right, and disapproval, particularly by peers, is a dreaded sanction. People in this stage, according to Loevinger and Wessler, constitute the largest part of any social group, or at least the greatest minority (1970).

The conscientious stage is next and the transition into it is shown by a more conscious awareness of oneself and one's feelings. This stage of development is viewed by Loevinger and Wessler to be " . . . modal for students during the first two years of college" (1970, p. 5). People also begin to see many possibilities in situations, and they view rules as having exceptions or holding certain contingencies. In short, there is evidence of the more complex thinking of which Perry (1970) focused on to support his Schema of Cognitive and Ethical Development.

According to the Loevinger and Wessler theory, the movement from the conscientious to the autonomous stage is characterized by an awareness of one's individuality and a concern about emotional dependence. Relations with other people have deepened during the change from conformist to the conscientious stage, they and are sometimes seen as presenting a problem to the striving for achievement and one's responsibility to oneself. Inner conflict is recognized as part of being human.

In this stage, other people's right to individuality is recognized, and moral dichotomies are no longer characteristic. Instead, people in this stage view life and other people as being highly complex and multifaceted. Others are more respected, as is their right to choose their own path in life. Self-fulfillment

partially takes the place of striving for achievement. In dealing with inner conflict, one accepts the fact that not all problems can be solved, nor does one project blame onto the environment or other people as is characteristic of the lower stages.

Finally, the integrative stage, which is the highest level of development, is characterized by people who can transcend conflict and reconcile differences to become self-actualized.

To measure the stages of ego development, Loevinger and Wessler developed a psychometric projective instrument consisting of thirty-six sentence completion items. A separate questionnaire was developed for women and men.

Person-Environment Fit Theory (P-E Fit)

Harrison (1978) addressed the approaches of organizational researchers who concentrated on either the individual or the environment through emphasis on psychoanalysis, behaviorism, the social relationships of the person in the work organization, or the effects of the demands of jobs, such as the effects on performance levels. In contrast to these narrow approaches, Harrison believed that both the person and the environment should be studied together to obtain a greater understanding of psychological effects and behavior: "Human behavior, however, is not understood in terms of either the environment or the person alone, but in terms of the interrelationships between the two" (p. 175). The relationship between job stress and personal health emanated from research done by members of the Social Environment and Mental Health research program at the Institute for Social Research, the University of Michigan (Harrison 1978). The following

explanation of the theory is drawn from Harrison's synthesis of research on P-E fit theory.

There are two aspects of fit between the individual and the environment. One has to do with the fit between the person's abilities and skills, and the demands of the work place (environment), whereas the other is concerned with the individual's needs for status, adequate remuneration, feelings of competence, and so forth. A distinction is made between the environment and the things that compose it (the reality of the environment) and the person's perception of the environment.

In this theory, the objective environment consists of those things, happenings, or demands that exist outside the individual, whether it be in the work place, the family, or in other social structures within which the individual functions. The subjective environment, however, consists of that which the person perceives the environment to be, and it may be quite different from the objective environment. This perception is influenced by the psychology of the individual and by the person's ability to assess realistically and accurately the environment and its demands, rewards, and sanctions. In the academic setting, the objective environment may include such matters as the regulations and requirements of the institution, as well as its particular organizational culture. Subjectively, and according to each student's perception, such requirements may be intellectually modified to conform with their personal psychology.

The objective person is the person who exists in real life. It refers to the abilities, needs, values, and other characteristics

peculiar to the individual. The subjective person, in contrast, refers to the person's self-image and personal understanding of his or her perceived abilities, needs, values, and so forth which, depending on the psychology of the individual and the degree of awareness, may be accurate or not when compared to the objective person.

Harrison (1978) cites French and associates (1974), who examined four concepts that are related to the objective and subjective environment and person. Two deal with the discrepancies that may arise from the individual's subjective perception of the environment: The person's contact with reality is defined as the difference between the objective environment and the perception of that environment, and the person's accuracy of self-assessment is the difference between that objective person and the person's subjective self-image. For example, a student may have the mental capacity to learn mathematics and become proficient in statistics, accounting, or calculus, but because of his or her poor self image or high anxiety about mathematics, such an undertaking may never be begun, with the result that the student remains convinced that mathematics is beyond his or her ability.

The other two concepts deal with the discrepancies between the degree of fit between the environment and the individual:

> A good fit occurs when the job environment can provide the supplies wanted by the person (e.g., money, social involvement, opportunity to achieve), while the person can provide the abilities required by the job environment (e.g., manual dexterity, computer programming skills, good physical health) (Harrison, 1978, p. 177).

The degree of P-E fit can be both objective and subjective: Objective P-E fit is the degree of fit between the objective person and the objective environment. Subjective P-E fit is the degree of fit

between the person's subjective perception of the environment and the person's subjective perception of his or her P-E fit.

The measurement of the four discrepancies is seen to be a good indication of stress and its effect on health. Where there is good P-E fit, satisfaction and enhanced health are likely. Where poor P-E fit occurs, stress and illness often result (Harrison, 1978). It seems logical to suggest that students with high ego development might experience less strain and enjoy greater satisfaction in an open environment conducive to free expression and creativity, than in a restrictive environment that discourages individuality and values conformity to its norms. The same might be true of students who have low ego development and are functioning in a more restrictive environment.

Educational Environments and Stress

A contribution to the study of stress was made by Whitman et al. (1984). In their view, the person-environment fit model is useful in understanding what stresses students because its proponents recognize that the same situation or environment can produce different reactions in different people; some will experience stress, whereas others will regard the situation as a challenge. Thus,

> When students appraise their education as a challenge, stress can bring them a sense of competence and an increased capacity to learn. When education is seen as a threat, however, stress can elicit feelings of helplessness and a foreboding sense of loss (p. 1).

Distress occurs when stress becomes excessive.

Whitman et al. (1984) note that in the undergraduate college environment stress occurs for some students because of their separation

from family or the lack of personal attention found in large institutions. For many, the change from high school to college is too great, and they choose to leave the environment rather than to fight and master it. Whitman further states that for graduate students, and in particular doctoral candidates, stress is often caused by their inability to achieve social intimacy because of the demands on their time. Furthermore, some students think that they are at the mercy of the faculty and live as if they were powerless. The most stressful tasks appear to be the comprehensive examinations and the dissertation.

The researchers cited above tend to support the contention that older adults face even more difficulties in these environments--they may resent losing their autonomy and being restricted in class. The restrictive environment, then, may be for some a source of strain, whereas for others it may be just what they need; there is a fit between them and the environment.

In his classic work entitled, "Anxiety as an Emotional State," Spielberger (1972) observed:

> The term anxiety is perhaps the most commonly used in contemporary psychology to denote a palpable but transitory emotional state or condition characterized by feelings of tension and apprehension and heightened autonomous nervous system activity (p. 24).

Further, in a discussion of the early research that was focused on emotion, Spielberger (1972) noted the difficulties that researchers encountered in trying to define anxiety, which led to a change of emphasis:

> For many psychologists, the word "emotion" has "mentalistic" connotations whereas the concept of stress, taken from physics and engineering, is more objective and therefore more "scientific." As Lazarus (1966) has noted, much of what was previously studied

> under the rubric of emotion is now considered in terms of psychological stress (p. 26).

Spielberger also observed that, among the psychologists of that period, the words stress, threat, and anxiety were frequently used as if they meant the same thing. In his theory of anxiety, however, stress refers to " The objective stimulus properties of a situation" (1972, p. 30), i.e., external environmental situations or conditions, whereas " . . . threat refers to an individual's idiosyncratic perception of a situation as physically or psychologically dangerous" (1972, p. 30).

Anxiety, and in particular State-Anxiety (A-State), refers ". . . to the complex emotional reactions that are evoked in individuals who interpret specific situations as personally threatening" (Spielberger, 1972, p. 30). A threat can be anything that brings forth fear in the individual, such as fear of failure, physical harm, or shame. In particular, when a threatening situation is connected with "ego-involving" (p. 40) matters, such as taking examinations or other cognitive or ability tests, higher anxiety levels tend to occur.

Fear appears to be the key factor in Spielberger's theory. If a person sees a situation as threatening or dangerous, whether or not the threat or danger is objectively real, there will be a rise in the level of A-State, i.e., an increase in emotional reactions observed by increases in the pulse rate, perspiration, and so forth.

Spielberger's theory (1972) also depends on the differences between personality states and traits. As discussed above, personality states are those temporary states which exist in any particular moment in time and intensity, and which result in emotional reactions. Contrasting the passing nature of these states, personality traits are

seen as relatively enduring individual differences with which people view the world, and in individual dispositions which lead them to react in a predictable manner in certain situations.

The implications of these differences in personality states and traits are important in considering the measurement of anxiety, and the following definitions sum up and clarify this dichotomy "State anxiety (A-State) may be conceptualized as a transitory emotional state or condition of the human organism that varies in intensity and fluctuates over time" (Spielberger, 1972, p. 39). Spielberger saw this temporary A-State as characterized by high levels of tension and fear when the individual perceives a threatening circumstance, whether or not it is objectively valid, and low in situations that are non-stressful. On the other hand,

> Trait anxiety (A-Trait) refers to relatively stable individual differences in anxiety proneness, that is, differences in the dispositions to perceive a wide range of stimulus situations as dangerous or threatening, and in the tendency to respond to such threats with A-State reactions (Spielberger, 1972, p. 39).

The State-Trait Anxiety Inventory (STAI) was developed to measure both A-State and A-Trait. It has been widely and confidently used in more than 225 publications per year since 1980 (Spielberger, 1984. For a copy, contact Consulting Psychologists Press, 577 College Avenue, Palo Alto, CA 94306.)

Application of the Theories to the Research

The purpose of this research was to determine if the stages of ego development older adults were related to the degree of environmental restrictiveness in professional and liberal arts schools, and to see if there was an interaction between this person-environment fit and

satisfaction and anxiety. In other words, do students who have high ego development give evidence of good person-environment fit regardless of the academic environment? Or does the person-environment fit demand more of a match between the level of ego development and the constraints or lack of constraints in the environment? For example, one might reason that students in the conformity stage would be better adjusted and experience less anxiety in schools with relatively rigid academic requirements, administrative regulations, and traditional teaching methods, than students with higher levels of ego development in the same setting. Would this reasoning imply that in traditionally oriented professional schools, with allegedly more restrictive environments, a large number of students might be found whose level of ego development has either not progressed much beyond the conformity stage or has regressed to that stage as a result of socialization in a prior work environment?

On the other hand, do older adults in liberal arts schools have higher levels of ego development, and are they less well adjusted in schools fostering traditional approaches to education which are geared to undergraduates' lower levels of development? These are some of the questions that were examined in this study:

1. To identify and compare the stages of ego development among older adults in professional school programs versus older adults in liberal arts programs.

2. To compare perceptions of the academic and administrative environments of older students in these two different kinds of schools.

3. To examine the fit between ego development and perceived

environments of students in the schools, and to compare the fits for each kind of student.

4. To compare the levels of anxiety and degrees of satisfaction of students in each type of school.

5. To determine if the fit between ego development and environment is related to anxiety and satisfaction of students in these two types of school.

Research Methods

A random sample of non-traditional graduate students, all 35 years old or older, was drawn from five graduate schools in the New York City metropolitan area: three professional schools and two liberal arts schools. Three questionnaires were used in this study: The Washington University Sentence Completion Test, developed by Loevinger, Wessler, & Redmore, which measures ego development; the Student Reactions to College Questionnaire (SRC) E.T.S., Princeton, from which six factors measuring perceived openness-restrictiveness of the environment, and two factors measuring satisfaction-dissatisfaction were created; and the State-Trait Anxiety Index, measuring the level of state anxiety. A total of 279 responses were received, averaging 47% across the schools. SPSS Multiple Analysis of Variance procedures and Student's t-tests were employed to analyze the data.

As stated earlier, selected questions from the SRC were combined to operationalize the variables, openness-restrictiveness and satisfaction-dissatisfaction. Initially, 43 questions were chosen as measures of openness-restrictiveness, and 20 questions for satisfaction-dissatisfaction. A panel of five judges, chosen from

researchers who have published articles on the subject of person-environment fit, reviewed the questions for face or content validity. Responses to these questionnaires reduced the number of questions to thirty-three, out of the original forty-three questions for openness-restrictiveness, and fourteen, out of the original twenty questions for satisfaction-dissatisfaction.

After the questionnaires were administered to students, factor analyses and reliability tests were performed, which reduced the questions to nineteen for openness-restrictiveness, and seven for satisfaction-dissatisfaction. (See Appendix A, Tables 1-6, pages 35-41.) The factor analysis produced six factors for openness-restrictiveness, and two factors for satisfaction-dissatisfaction, as follows:

Openness-Restrictiveness Factors

1. Availability of Assistance
2. Adequacy of Instructor Feedback
3. Openness of Administration
4. Openness to Student Contribution to Policy
5. Openness of Advisement & Counseling
6. Openness of Scheduling & Registration

These six factors accounted for 61% of the explained variance.

Satisfaction-Dissatisfaction Factors

1. Satisfaction with Course Content and Teaching
2. Satisfaction with Campus Environment

Tables 5 and 6 (p. 41) show the alpha scores obtained by using the Cronbach Alpha reliability test. Six factors of the openness-restrictiveness instrument produced alpha scores ranging from 0.62 to 0.73. Of the two factors produced from the satisfaction-dissatisfaction questions, alpha scores ranged from 0.67 to 0.78.

These two factors accounted for 59% of the explained variance.

The content of the six openness-restrictiveness factors, hereafter referred to as dimensions, are noted in Appendix B, (p. 42).

Treatment of the Data

To test the hypotheses, the scores of professional school students on anxiety and satisfaction were compared with the scores of liberal arts students. Multiple Analysis of Variance (MANOVA) was employed for this purpose.

To obtain the scores, judgments were made on which total protocol ratings on the Loevinger and Wessler SCT to measure ego development, and scores on the SRC to reflect the restrictiveness of the environment as perceived by each student. To operationalize high and low ego development scores, a dichotomy was made at the conscientious stage, which in Loevinger and Wessler's (1970) terms, shows evidence of more complex thinking and awareness of oneself and feelings, and may thus be viewed as the beginning of higher ego development levels. The dichotomy for scores on openness-restrictiveness of the environment, was determined by factor analysis, which yielded standardized scores with a mean of 0 and a standard deviation of 1. With such a standardized variable, it was important to dichotomize about the mean of 0, thus creating two groups: above average scores and below average scores. As shown earlier in Figure 1, there are four possible P-E fits for both professional and liberal arts students. The multiple analysis of variance on the anxiety scores, as measured by the STAI (with "trait" anxiety included as an independent variable to separate out the effect of trait on state anxiety), and on the satisfaction scores, as

measured by the SRC, produced an "F" value. Where appropriate a Student's t-test, found in SPSS, was employed as a post hoc procedure.

Findings

The primary results of the analyses described above are as follows:

1. No statistical significant difference was found in the level of ego development between older students in professional schools and older students in liberal arts schools.

2. In general, no significant difference was found between professional and liberal arts students on their perceptions of the overall openness or restrictiveness of the environment. However, ten main effects and two interactive effects emerged:

Main Effects

Effects on Anxiety

1. Professional school students report a significantly higher level of state anxiety than liberal arts school students.

2. Students with higher ego development levels show significantly higher levels of state anxiety.

Effects on Satisfaction

3. Students with lower ego development levels are significantly more dissatisfied on Course Content and Teaching.

4. Students who find Availability of Assistance to be restrictive, are significantly more dissatisfied on Course Content and Teaching.

5. Students who find Openness of Advisement and Counselling to be restrictive, are significantly more dissatisfied on Course Content and Teaching.

6. Students who find Openness of Scheduling and Registration to be restrictive, are significantly more dissatisfied on Course Content and Teaching.

7. Students who find Availability of Assistance to be restrictive, are significantly more dissatisfied on Campus Environment.

8. Students who find Adequacy of Instructor Feedback to be restrictive, are significantly more dissatisfied on Campus Environment.

9. Students who have a positive outlook on Openness of Administration are significantly more satisfied on Campus Environment.

10. Students who have a positive view of Advisement and Counselling are significantly more satisfied on Campus Environment.

Interaction Effects

1. Liberal arts students who find Availability of Assistance to be restrictive, are significantly more dissatisfied with Course Content and Teaching.

2. Students with lower ego development, regardless of school type, who view Student Contribution to Policy to be open, are significantly more dissatisfied with Course Content and Teaching.

Meaning for Higher Education

The results of this research provide a message for higher education. First, the finding that students who perceive advisement and counseling to be restrictive are more dissatisfied on course content and teaching, is an important one. It corresponds with a discussion by Pascarella and Terenzini (1991) in which links between orientation and academic integration and persistence of undergraduate students are examined. The conclusion was reached that, "With a few exceptions . . . the weight of evidence does suggest a statistically positive link between exposure to various orientation experiences and persistence . . ." (p. 403). On the other hand, the research examining the relationship between advisement and educational success, and advisement and persistence, also discussed by Pascarella and Terenzini in the work cited above, indicates that although there were some findings that quality of advisement had a positive effect on persistence, there was, in their judgment, not enough evidence to substantiate this conclusion. Given the current state of knowledge, the seeming paradoxes can only be resolved by further research, but a significant finding of this research is that the Pascarella and Terenzini conclusion can now be extended to include older adults in professional schools and older adults in liberal arts schools.

Consideration of the results of the present research study also raises issues still untapped by the literature. The findings that professional school students report higher levels of anxiety, and the higher levels of anxiety reported by those students with higher ego development scores, has practical implications for evaluating student

progress or lack thereof. This knowledge can also be useful in understanding student problems and in considering ways to overcome them effectively.

The findings of this research with reference to the ten main effects and the two interaction effects that emerged from the relationship of school type, ego development, environmental factors, and anxiety and satisfaction, provide support for the inclusion of ego development and trait-state anxiety variables in assessing student problems and in assisting students to adapt to their educational programs. For example, knowing the ego development levels of entering students may assist advisors in recommending courses that utilize teaching methods which match students' developmental levels. We do not recommend full-scale psychological testing of all students, but we do suggest that faculty members and other professional advisors should be familiar with the theories of developmental psychology. Students with low ego development, for instance, might be advised to begin their graduate studies by taking courses that have more structure, rather than immediately taking courses that require individual initiative and personal responsibility for what is learned. Later, as they make progress in the program, advisors could direct them to more challenging courses that would create the right amount of tension to help them grow. Needless-to-say, instructors should find developmental theory to be a valuable guide in preparing course materials and class assignments that are aimed at assisting in the development of the whole person, rather than placing the focus solely on the acquisition of knowledge. Developing the whole person, as discussed by Boyatzis, et al. (1995),

involves knowledge, abilities and values. Placing the emphasis on student learning, rather than on teaching, as he recommends, " . . . creates profound transformation in the life of the learner. Such learning opens doors through the barriers of class, race, gender, and ethnic identification" (p. 232).

Further research using person-environment fit concepts and ego development theory should produce more interesting results, particularly if focused upon various aspects of student life, including performance in course work, interpersonal relations with faculty, administrators and staff, and career development. Research in these areas will undoubtedly contain policy implications. For example, it would be useful for faculty to know the stages of ego development and the levels of anxiety of students who are being accepted into degree programs so that the appropriate teaching methods can be employed. Highly anxious students, for example, would not perform well in unstructured, independent study projects, whereas more autonomous, less anxious students might excel.

Finally, Peter Jarvis (1992) eloquently states his thoughts on this subject,

> Teaching and reflective learning and human growth and development are all facilitated in the process of genuine human interaction. Teaching is a humanistic enterprise, and only in human relationships is it possible to establish the best conditions for human growth (p. 245).

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APPENDIX A

Table 1

Openness-Restrictiveness Factors

1. Availability of Assistance
2. Adequacy of Instructor Feedback
3. Openness of Administration
4. Openness to Student Contribution to Policy

Openness/Restrictiveness Varimax Rotated Factor Matrix

Questions	Factor 1	Factor 2	Factor 3	Factor 4
21	.80603	.00227	.09129	-.00818
19	.68621	-.02211	.12044	-.05513
37	.65725	.08754	-.03117	.11967
51	.61112	.30429	-.13812	-.07317
15	.10931	.85125	-.05061	.12982
16	.14075	.83848	.01957	.00325
12	.00937	.68446	-.03974	-.12820
24	.07373	-.06052	.81007	.03967
25	.15177	-.06077	.78542	.03054
97	-.17335	.06143	.61532	.26570
80	-.04363	.06742	-.04651	.80103
106	-.08309	-.04125	.12928	.74974
84	.15518	-.06021	.22285	.69343
32	.01825	-.05742	.13356	.00373
38	-.00319	.02460	.01071	.09009
33	.03920	-.11016	.35681	.04634
118	.01194	-.02852	.19187	.03230
117	.08103	.08227	-.02529	.13274
116	-.03356	-.00779	-.03410	.13498

continued

Table 1 continued

Openness-Restrictiveness Factors

5. Openness of Advisement & Counseling
6. Openness of Scheduling & Registration

Questions	Factor 5	Factor 6
21	.04454	.05273
19	-.11119	-.06552
37	.08771	.02453
51	.03302	.06199
15	-.07048	-.02893
16	.13071	.01020
12	-.17398	.05639
24	.19083	-.07925
25	.24045	.08678
97	-.07532	.13812
80	-.00197	.03174
106	.12891	.20691
84	.03251	.11082
32	.82381	.05816
38	.81155	.04926
33	.54039	.07101
118	.05387	.76929
117	.01406	.76816
116	-.08613	.73073

Factor	Eigenvalue	Percent of Variance Explained	Cumulative Percent
1	3.12963	16.5	16.5
2	1.48511	13.1	29.6
3	1.95594	10.3	39.8
4	1.45549	7.7	47.5
5	1.38238	7.3	54.8
6	1.16869	6.2	60.9

Table 2

Satisfaction-Dissatisfaction Factors

1. Satisfaction with Course Content and Teaching
2. Satisfaction with Campus Environment

Satisfaction/Dissatisfaction Varimax
Rotated Factor Matrix

Questions	Factor 1	Factor 2
46	.86376	.01797
48	.82939	.02502
45	.81346	-.07908
105	.04548	.78778
104	-.01284	.76331
96	-.02960	.72326
81	-.03239	.55095

Factor	Eigenvalue	Percent of Variance Explained	Cumulative Percent
1	2.12032	30.3	30.3
2	2.01662	28.8	59.1

Table 3

Varimax Factor Solution Openness/Restrictiveness Factors:
Professional and Liberal Arts
Graduate Students

	Factor (N=279) Loading
Factor 1: Availability of Assistance	
Question#	Alpha
19	.69
21	.80
37	.66
51	.61
Alpha Coefficient:	.6345
Factor 2: Adequacy of Instructor Feedback	
Question#	Alpha
12	.68
15	.85
16	.84
Alpha Coefficient:	.7345
Factor 3: Openness of Administration	
Question#	Alpha
*24	.81
*25	.78
*97	.61
Alpha Coefficient:	.5867

*Positive to negative.

continued

Note: For a copy of the Student Reaction to College Questionnaire, contact Educational Testing Service, Princeton, N. J. 08541

Table 3 continued

	Factor (N=279) Loading
Factor 4: Openness to Student Contribution to Policy	
Question#	Alpha
*80	.80
*84	.69
*106	.75
Alpha Coefficient:	.6673
*Positive to negative.	
Factor 5: Openness of Advisement & Counselling	
Question#	Alpha
*32	.82
*33	.54
*38	.81
Alpha Coefficient:	.6393
*Positive to negative.	
Factor 6: Openness of Scheduling & Registration	
Question#	Alpha
*116	.73
*117	.77
*118	.77
Alpha Coefficient:	.6243
*Positive to negative	

Note: For a copy of the Student Reaction to College Questionnaire, contact Educational Testing Service, Princeton, N. J. 08541

Table 4

Varimax Factor Solution Satisfaction/Dissatisfaction Factors
Professional and Liberal Arts Graduate Students

	Factor (N=279) Loading
Factor 1: Satisfaction with Course Content & Teaching	
Question#	Alpha
*45	.81
*46	.86
*48	.83
Alpha Coefficient:	.7824

*Positive to negative

Factor 2: Satisfaction With Campus Environment	
Question#	Alpha
81	.55
96	.72
104	.76
105	.79
Alpha Coefficient:	.6716

Note: For a copy of the Student Reaction to College Questionnaire, contact Educational Testing Service, Princeton, N. J. 08541

Table 5

Reliability of the Openness/Restrictiveness Factors

Factor Name	Questions	Alpha
1. Availability of Assistance	19, 21, 37, 51	.6345
2. Adequacy of Instructor Feedback	12, 15, 16	.7345
3. Openness of Administration	24, 25, 97	.5867
4. Openness to Student Contribution to Policy	80, 84, 106	.6673
5. Openness of Advisement & Counselling	32, 33, 38	.6393
6. Openness of Scheduling & Registration	116, 117, 118	.6243

Table 6

Reliability of Satisfaction/Dissatisfaction Factors

Factor Name	Questions	Alpha
1. Satisfaction With Course Content & Teaching	45, 46, 48	.7824
2. Satisfaction With Campus Environment	81, 96, 104, 105	.6716

APPENDIX B

Openness-Restrictiveness Dimensions

1. Availability of Assistance

The four questions which comprise this dimension focus on the availability of help from faculty and staff with problems relating to course work, studies, and other college matters.

2. Adequacy of Instructor Feedback

This dimension examines the frequency and adequacy of instructor response to student concerns about course requirements, examinations, papers, and other materials submitted by students.

3. Openness of Administration

The three questions in this dimension examine student perceptions of difficulties and hurdles encountered in the areas of registration, obtaining information, and other administrative processes.

4. Openness to Student Contribution to Policy

This dimension examines the willingness of college administrators to consult with students and act upon their concerns and suggestions for policy. Administrative oversight of student publications is also measured.

5. Openness of Advisement and Counseling

Questions in this dimension measure student difficulty in meeting with a faculty advisor or counselor, and with the accuracy of information supplied by college staff members.

6. Openness of Scheduling & Registration

This dimension is concerned with course scheduling and registration problems, drop-add requirements, and with students being prevented from taking required courses because of scheduling decisions.

Satisfaction-Dissatisfaction Dimensions

Two dimensions, with alpha scores ranging from 0.67 to 0.78, were judged to be of value for research:

1. Satisfaction with Course Content and Teaching

Three questions deal with student reaction to course content: boredom, unnecessary repetition of familiar materials, and frustration with the slow pace of class.

2. Satisfaction with Campus Environment

This dimension is comprised of four questions which focus on the general campus environment with regard to rules and regulations, the friendliness of the college atmosphere, and the services of the book store and library.

ADDENDUM

Hypothesis 1. There is no difference in the level of ego development between older students in professional school programs and older students in liberal arts programs.

Table 1

Sample Characteristics: Stages of Ego Development by Professional Schools

Stage	Value	N	Percent
Impulsive	1	1	.6
Protective	2		
Protective/ Conformist	3	4	2.1
Conformist	4	14	8.4
Conformist/ Conscientious	5	50	26.6
Conscientious	6	83	44.1
Conscientious/ Autonomous	7	13	6.9
Autonomous	8	1	.5
Integrative	9		
Total		166	

Mean: 5.518 Mode: 6.000 Standard Deviation: .939

Table 2

Sample Characteristics: Stages of Ego Development of Students in Liberal Arts Schools

Stage	Value	N	Percent
Impulsive	1		
Protective	2	2	2.4
Protective/ Conformist	3		
Conformist	4	5	5.9
Conformist/ Conscientious	5	23	27.1
Conscientious	6	39	45.9
Conscientious/ Autonomous	7	14	16.5
Autonomous	8	2	2.4
Integrative	9		
Total		85	

Mean: 5.729 Mode: 6.000 Standard Deviation: 1.040

Table 3

Ego Development Scores by School Type
(Student's t-test)

Professional Schools			Liberal Arts Schools		
Mean	N	Std. Dev.	Mean	N	Std. Dev.
5.5	166	0.939	5.7	85	1.040

Two-tailed test: t = 1.63 p = .105

Hypothesis 2. There is no difference in the openness-restrictiveness of the educational environment as perceived by older students in professional school programs and older students in liberal arts school programs.

Table 4

Openness/Restrictiveness of Environment
(Dimension 1: Availability of Assistance)
by School Type
(Student's t-test)

Professional Schools			Liberal Arts Schools		
Mean	N	Std. Dev.	Mean	N	Std. Dev.
.40	187	.491	.37	92	.485

Two-tailed test: t = .51 p = .614

Table 5

Openness/Restrictiveness of Environment
(Dimension 2: Adequacy of Instructor Feedback)
by School Type
(Student's t-test)

Professional Schools			Liberal Arts Schools		
Mean	N	Std. Dev.	Mean	N	Std. Dev.
.54	187	.499	.49	92	.503

Two-tailed test: t = .88 p = .378

Table 6
Openness/Restrictiveness of Environment
(Dimension 3: Openness of Administration)
by School Type
(Student's t-test)

Professional Schools			Liberal Arts Schools		
Mean	N	Std. Dev.	Mean	N	Std. Dev.
.39	187	.490	.28	92	.453

Two-tailed test: t = 1.86 p = .064

Table 7

Openness/Restrictivenss of Environment
(Dimension 4: Openness to Student Contribution to Policy)
by School Type
(Student's t-test)

Professional Schools			Liberal Arts Schools		
Mean	N	Std. Dev.	Mean	N	Std. Dev.
.61	187	.488	.59	92	.495

Two-tailed test: t = .45 p = .654

Table 8

Openness/Restrictiveness of Environment
(Dimension 5: Openness of Advisement and Counselling)
by School Type
(Student's t-test)

Professional Schools			Liberal Arts Schools		
Mean	N	Std. Dev.	Mean	N	Std. Dev.
.30	187	.462	.18	92	.390

Two-tailed test: t = 2.15 p = .033*

*Statistical significance.

Table 9

Openness/Restrictiveness of Environment
(Dimension 6: Openness to Scheduling and Registration)
by School Type
(Student's t-test)

Professional Schools			Liberal Arts Schools		
Mean	N	Std. Dev.	Mean	N	Std. Dev.
.32	187	.468	.29	92	.458

Two-tailed test: t = .46 p = .644

Hypothesis 3. There is no difference in the level of anxiety between older adults in professional school programs and older adults in liberal arts programs.

Table 10

Levels of State Anxiety by Trait Anxiety
and School Type

	Professional Schools			Liberal Arts Schools		
Trait Anxiety	Mean	SD	N	Mean	SD	N
Low	33.3	9.1	136	29.1	17.9	50
High	48.3	11.1	51	45.4	11.0	42
	Total N: 187			Total N: 92		

Variable	DF	F	P
School Type	1	5.08	.025*
Trait by School Type	1	.19	.664

*Statistical significance in a one-tailed test.

Hypothesis 4. There is no difference in the level of satisfaction experienced by older students in professional school programs and older students in liberals arts programs.

Table 11

Satisfaction with Dependent Variable 1
(Course Content and Teaching)

Professional Schools			Liberal Arts Schools		
Mean	N	Std. Dev.	Mean	N	Std. Dev.
-.33	187	.988	.07	92	1.026

Two-tailed test: t = -.79 p = .431

Table 12

Satisfaction with Dependent Variable 2
(Campus Environment)

Professional Schools			Liberal Arts Schools		
Mean	N	Std. Dev.	Mean	N	Std. Dev.
-.07	187	1.085	.14	92	.787

Two-tailed test: t = -1.60 p = .110

Hypothesis 5. There is no difference between the reported levels of anxiety between older adults in professional school programs, and older adults in liberal arts programs, as related to variations in person-environment fit, i.e., students with lower ego development levels, in restrictive environments, do not experience less anxiety. Conversely, students with higher ego development levels, in restrictive environments, do not experience greater anxiety. On the other hand, students with lower ego development levels, in more open environments, do not experience more anxiety, whereas students with higher ego development levels, in more open environments, do not experience less anxiety.

(See Tables 13-16, pp. 6-9.)

Table 13

Levels of State Anxiety by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 1: Availability of Assistance)

EGO	Professional Schools: Openness/Restrictiveness of Environment Dimension 1 Availability of Assistance						Liberal Arts Schools: Openness/Restrictiveness of Environment Dimension 1 Availability of Assistance						Combined Means			
	Restrictiveness			Openness			Restrictiveness			Openness			Restrictiveness		Openness	
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	N	Mean	N
SCORES Low	37.6	11.2	50	38.6	11.0	40	31.5	22.4	28	38.3	19.7	9	34.5	78	38.5	49
High	35.3	12.2	52	38.1	10.8	31	40.0	10.5	21	39.4	16.5	18	37.7	73	38.8	49
	Total N: 173						Total N: 76						Total N: 249			

Variable	DF	F	P
Ego Development	1	3.03	.083
School Type	1	4.29	.040*
O/R Environment	1	.53	.467
Ego by School by Environment	1	.46	.497

*Denotes a main effect with a statistical significance at the 5% level in a one-tailed test.

Table 14

Levels of State Anxiety by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 2: Adequacy of Instructor Feedback)

EGO	Professional Schools: Openness/Restrictiveness of Environment Dimension 2 Adequacy of Instructor Feedback						Liberal Arts Schools						Combined Means			
	Restrictiveness Mean	SD	N	Openness Mean	SD	N	Restrictiveness Mean	SD	N	Openness Mean	SD	N	Restrictiveness Mean	N	Openness Mean	N
Low	38.4	11.9	41	37.8	10.5	49	36.5	23.0	21	28.7	19.7	16	37.5	62	33.2	65
High	35.7	12.5	36	36.8	11.2	47	39.7	16.7	19	39.8	9.8	20	37.7	55	38.3	67
	Total N: 173						Total N: 76						Total N: 249			

Variable	DF	F	P
Ego Development	1	2.80	.096
School Type	1	5.56	.019*
O/R Environment	1	.66	.418
Ego by School by Environment	1	.01	.914

*Denotes a main effect with a statistical significance at the 5% level in a one-tailed test.

Table 15

Levels of State Anxiety by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 4: Openness of Student Contribution to Policy)

Openness/Restrictiveness of Environment Dimension 4
Openness of Student Contribution to Policy

EGO SCORES	Professional Schools						Liberal Arts Schools						Combined Means			
	Openness			Restrictiveness			Openness			Restrictiveness			Openness		Restrictiveness	
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	N	Mean	N
Low	39.0	12.0	58	36.4	9.1	32	31.3	23.7	25	37.0	17.1	12	32.8	83	37.7	44
High	37.4	12.7	46	35.0	10.4	37	39.6	13.7	30	40.2	13.2	9	38.8	76	37.4	46
	Total N: 173						Total N: 76						Total N: 249			

Variable	DF	F	P
Ego Development	1	3.28	.071
School Type	1	4.60	.033*
O/R Environment	1	.79	.375
Ego by School by Environment	1	.80	.373

*Denotes a main effect with a statistical significance at the 5% level in a one-tailed test.

Table 16

Levels of State Anxiety by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 6: Openness of Scheduling and Registration)

Openness/Restrictiveness of Environment Dimension 6
Openness of Scheduling and Registration

EGO	Professional Schools						Liberal Arts Schools						Combined Means			
	Openness			Restrictiveness			Openness			Restrictiveness			Openness		Restrictiveness	
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	N	Mean	N
S Low	36.3	10.9	66	42.9	10.4	24	32.3	22.7	27	35.4	19.9	10	36.7	93	33.1	34
C High	36.3	12.1	53	36.3	11.2	30	39.4	14.3	33	41.8	7.0	6	36.8	86	39.9	36
O R E S	Total N: 174						Total N: 76						Total N: 249			

Variable	DF	F	P
Ego Development	1	4.80	.029*
School Type	1	3.44	.065
O/R Environment	1	.06	.803
Ego by School by Environment	1	.97	.326

*Denotes a main effect with a statistical significance at the 5% level in a one-tailed test.

Hypothesis 6. There is no difference between the reported levels of satisfaction on Course Content and Teaching between older adults in professional school programs, and older adults in liberal arts programs, as related to variations in person-environment fit, i.e., students with lower ego development levels, in restrictive environments, do not experience greater satisfaction. Conversely, students with higher ego development levels, in restrictive environments, not experience less satisfaction. On the other hand, students with lower ego development levels, in more open environments, do not experience less satisfaction, whereas students with higher ego development levels, in more open environments, do not experience greater satisfaction.

(See Tables 17-20, pp. 12-15.)

Hypothesis 7. There is no difference between the reported levels of satisfaction on Campus Environment between older adults in professional school programs, and older adults in liberal arts programs, as related to variations in person-environment fit, i.e., students with lower ego development levels, in restrictive environments, do not experience greater satisfaction. Conversely, students with higher ego development levels, in restrictive environments, not experience less satisfaction. On the other hand, students with lower ego development levels, in more open environments, do not experience less satisfaction, whereas students with higher ego development levels, in more open environments, do not experience greater satisfaction.

(See Tables 21-24, pp. 16-19.)

Findings

The primary results of the analyses described above are as follows:

1. No statistical significant difference was found in the level of ego development between older students in professional schools and older students in liberal arts schools.

2. In general, no significant difference was found between professional and liberal arts students on their perceptions of the overall openness or restrictiveness of the environment. However, ten main effects and two interactive effects emerged:

Main Effects

Effects on Anxiety

1. Professional school students report a significantly higher level of state anxiety than liberal arts school students.

Main Effects, continued

2. Students with higher ego development levels show significantly higher levels of state anxiety.

Effects on Satisfaction

3. Students with lower ego development levels are significantly more dissatisfied on Course Content and Teaching.

4. Students who find Availability of Assistance to be restrictive are significantly more dissatisfied on Course Content and Teaching.

5. Students who find Openness of Advisement and Counselling to be restrictive are significantly more dissatisfied on Course Content and Teaching.

6. Students who find Openness of Scheduling and Registration to be restrictive are significantly more dissatisfied on Course Content and Teaching.

7. Students who find Availability of Assistance to be restrictive are significantly more dissatisfied on Campus Environment.

8. Students who find Adequacy of Instructor Feedback to be restrictive are significantly more dissatisfied on Campus Environment.

9. Students who have a positive outlook on Openness of Administration are significantly more satisfied on Campus Environment.

10. Students who have a positive view of Advisement and Counselling are significantly more satisfied on Campus Environment.

Interaction Effects

1. Liberal arts students who find Availability of Assistance to be restrictive are significantly more dissatisfied with Course Content and Teaching.

2. Students with lower ego development, regardless of school type, who view Student Contribution to Policy to be open are significantly more dissatisfied with Course Content and Teaching.

Table 17

Satisfaction with Dependent Variable 1 (Course Content and Teaching) by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 1: Availability of Assistance)

Openness/Restrictiveness of Environment Dimension 1
Availability of Assistance

EGO	Professional Schools						Liberal Arts Schools						Combined Means			
	Restrictiveness			Openness			Restrictiveness			Openness			Restrictiveness		Openness	
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	N	Mean	N
S Low	.21	1.1	40	.13	.91	29	.25	1.1	23	-.36	.49	7	.23	63	-.11	36
C O High	-.23	1.1	62	-.22	.86	35	.44	1.1	30	-.33	.68	25	.10	92	-.27	60
R E S	Total N: 166						Total N: 85						Total N: 251			

Variable	DF	F	P
Ego Development	1	.93	.335
School Type	1	.03	.854
O/R Environment	1	5.79	.017*
Ego by School by Environment	1	.16	.686
School Type by Environment	1	4.76	.030**

*Denotes a main effect with a statistical significance at the 5% level in a one-tailed test.
**Denotes an interaction effect with a statistical significance at the 5% level in a one-tailed test.

Table 18

Satisfaction with Dependent Variable 1 (Course Content and Teaching) by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 4: Openness of Student Contribution to Policy)

Openness/Restrictiveness of Environment Dimension 4
Openness of Student Contribution to Policy

EGO SCORES	Professional Schools						Liberal Arts Schools						Combined Means			
	Openness			Restrictiveness			Openness			Restrictiveness			Openness		Restrictiveness	
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	N	Mean	N
Low	.31	1.2	30	.08	.80	39	.60	1.5	11	-.17	.82	19	.45	41	-.04	58
High	-.50	1.0	38	-.05	.94	59	-.10	.72	22	.22	1.1	33	-.30	60	.08	92
	Total N: 166						Total N: 85						Total N: 251			

Variable	DF	F	P
Ego Development	1	4.93	.027*
School Type	1	1.57	.211
O/R Environment	1	.16	.691
Ego by School by Environment	1	.52	.470
Ego by Environment	1	9.85	.002**

*Denotes a main effect with a statistical significance at the 5% level in a one-tailed test.
**Denotes an interaction effect with a statistical significance at the 1% level in a one-tailed test.

Table 19

Satisfaction with Dependent Variable 1 (Course Content and Teaching) by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 5: Openness of Advisement and Counselling)

Openness/Restrictiveness of Environment Dimension 5
Openness of Advisement and Counselling

EGO	Professional Schools						Liberal Arts Schools						Combined Means			
	Openness			Restrictiveness			Openness			Restrictiveness			Openness		Restrictiveness	
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	N	Mean	N
SCORES Low	.06	.80	50	.50	1.3	19	-.06	1.0	22	.59	1.6	8	-.00	72	.54	27
High	-.24	1.0	64	-.20	.90	33	.01	.90	48	.63	1.4	7	-.11	112	.22	40
	Total N: 166						Total N: 85						Total N: 251			

Variable	DF	F	P
Ego Development	1	1.71	.192
School Type	1	2.43	.120
O/R Environment	1	6.78	.010*
Ego by School by Environment	1	.30	.584

*Denotes a main effect with a statistical significance at the 1% level in a one-tailed test.

Table 20

Satisfaction with Dependent Variable 1 (Course Content and Teaching) by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 6: Openness of Scheduling and Registration)

Openness/Restrictiveness of Environment Dimension 6
Openness of Scheduling and Registration

EGO	Professional Schools						Liberal Arts Schools						Combined Means			
	Openness			Restrictiveness			Openness			Restrictiveness			Openness		Restrictiveness	
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	N	Mean	N
SCORES Low	.06	.96	47	.43	1.0	22	-.08	.93	21	.56	1.6	9	-.01	68	.50	31
High	-.38	.93	63	.06	1.0	34	.02	.92	40	.27	1.1	15	-.18	103	.16	49
	Total N: 166						Total N: 85						Total N: 251			

Variable	DF	F	P
Ego Development	1	2.78	.097
School Type	1	.99	.320
O/R Environment	1	8.02	.005*
Ego by School by Environment	1	.58	.448

*Denotes a main effect with a statistical significance at the 1% level in a one-tailed test.

Table 21

Satisfaction with Dependent Variable 2 (Campus Environment) by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 1: Availability of Assistance)

Openness/Restrictiveness of Environment Dimension 1
Availability of Assistance

EGO SCORES	Professional Schools						Liberal Arts Schools						Combined Means			
	Restrictiveness Mean	SD	N	Openness Mean	SD	N	Restrictiveness Mean	SD	N	Openness Mean	SD	N	Restrictiveness Mean	N	Openness Mean	N
Low	-.15	1.2	40	.35	.83	29	-.02	.88	23	.45	.93	7	-.09	63	.40	36
High	-.37	1.1	62	-.02	.95	35	.17	.79	30	.06	.72	25	-.10	92	.02	60
	Total N: 166						Total N: 85						Total N: 251			

Variable	DF	F	P
Ego Development	1	1.67	.197
School Type	1	2.01	.157
O/R Environment	1	4.05	.045*
Ego by School by Environment	1	.53	.466

*Denotes a main effect with a statistical significance at the 5% level in a one-tailed test.

Table 22

Satisfaction with Dependent Variable 2 (Campus Environment) by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 2: Adequacy of Instructor Feedback)

Openness/Restrictiveness of Environment Dimension 2
Adequacy of Instructor Feedback

EGO SCORES	Professional Schools: Restrictiveness Mean	SD	N	Professional Schools: Openness Mean	SD	N	Liberal Arts Schools: Restrictiveness Mean	SD	N	Liberal Arts Schools: Openness Mean	SD	N	Combined Means: Restrictiveness Mean	N	Combined Means: Openness Mean	N
Low	-.17	1.3	32	.26	.84	37	.12	.96	18	.03	.84	12	-.02	50	.14	49
High	-.54	.94	44	.01	1.1	53	-.30	.74	26	.50	.56	29	-.42	70	.25	82
	Total N: 166						Total N: 85						Total N: 251			

Variable	DF	F	P
Ego Development	1	1.13	.288
School Type	1	2.24	.136
O/R Environment	1	9.76	.002*
Ego by School by Environment	1	1.99	.159

*Denotes a main effect with a statistical significance at the 1% level in a one-tailed test.

Table 23

Satisfaction with Dependent Variable 2 (Campus Environment) by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 3: Openness of Administration)

Openness/Restrictiveness of Environment Dimension 3
Openness of Administration

EGO	Professional Schools						Liberal Arts Schools						Combined Means			
	Openness			Restrictiveness			Openness			Restrictiveness			Openness		Restrictiveness	
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	N	Mean	N
SCORES Low	.14	1.0	45	-.10	1.2	24	.34	.74	18	.29	1.0	12	-.24	63	-.20	36
High	-.17	1.2	55	-.33	1.0	42	.19	.77	41	-.09	.72	14	.01	96	-.21	56
	Total N: 166						Total N: 85						Total N: 251			

Variable	DF	F	P
Ego Development	1	.70	.402
School Type	1	1.13	.288
O/R Environment	1	5.18	.024*
Ego by School by Environment	1	.20	.655

*Denotes a main effect with a statistical significance at the 5% level in a one-tailed test.

Table 24

Satisfaction with Dependent Variable 2 (Campus Environment) by Ego Development, School Type, and Openness/Restrictiveness of Environment (Dimension 5: Openness of Advisement and Counselling)

Openness/Restrictiveness of Environment Dimension 5
Openness of Advisement and Counselling

EGO	Professional Schools						Liberal Arts Schools						Combined Means			
	Openness			Restrictiveness			Openness			Restrictiveness			Openness		Restrictiveness	
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	N	Mean	N
S Low	.26	.79	50	-.47	1.5	19	.37	.55	22	-.70	1.2	8	.32	72	-.58	27
C High	-.09	.93	64	-.53	1.3	33	.14	.75	48	-.02	.86	7	.02	112	-.27	40
O R E S	Total N: 166						Total N: 85						Total N: 251			

Variable	DF	F	P
Ego Development	1	.00	.955
School Type	1	.95	.332
O/R Environment	1	13.45	.000*
Ego by School by Environment	1	.89	.348

*Denotes a main effect with a statistical significance at the 1% level in a one-tailed test.

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